

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of the claims in the application:

### **Listing of Claims:**

1. (Cancelled)
2. (Cancelled)
3. (Currently Amended) A method of ring protection, comprising:
  - at a head end ~~node~~: node connected to a first and a second transmission ring;
  - feeding all traffic on ~~two~~ each of the first and the second transmission rings; and
  - summing all traffic received on the ~~two~~ first and the second transmission rings;
  - at a plurality of remote nodes: nodes, each of the plurality of remote nodes independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic;
  - when a remote node detects a facility failure on ~~one of the two~~ a faulty transmission rings; ring,
  - transmitting forward alarm signals on the ~~one~~ faulty transmission ring and return alarm signals on ~~the other~~ a non-faulty transmission ring; and
  - globally selecting the ~~one~~ faulty transmission ring to transmit traffic to the head end node and the ~~other~~ non-faulty transmission ring to receive traffic from the head end node; and
  - when a remote node receives a forward alarm signal,
  - passing the forward alarm signal on the faulty transmission ~~ring on which the forward alarm signal was received~~; ring; and
  - globally selecting the faulty transmission ring ~~on which the forward alarm signal was received~~ to transmit traffic and the ~~other~~ non-faulty transmission ring to receive traffic from the head end node.
4. (Currently Amended) The method of claim 3, further comprising:
  - when a remote node receives a return alarm signal,

passing the return alarm signal on the non-faulty transmission ~~ring~~ on which the return alarm signal was received; ~~ring~~; and

globally selecting the non-faulty transmission ring ~~on which the return alarm signal was received~~ to transmit traffic to the head end node and ~~one either~~ of the ~~two~~ first and the second transmission rings to receive traffic from the head end node.

5. (Currently Amended) The method of claim 3, wherein when a remote node detects a facility failure on ~~one of the two~~ a faulty transmission ~~rings~~ ring comprises when a remote node receives a ring level failure alarm on ~~one either~~ of the ~~two~~ first and the second transmission rings.

6. (Original) The method of claim 3, further comprising:  
at the head end node,  
terminating received forward and return alarm signals.

7. (Currently Amended) A method of ring protection ~~at a remote node in a dual-fed network~~; comprising:

~~detecting~~ detecting, at a remote node in a dual fed network, a facility failure on a first a faulty transmission ~~ring~~; ring, the dual fed network having a first transmission ring and a second transmission ring and the remote node independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic;

transmitting a forward alarm signal on the ~~first faulty~~ transmission ring and transmitting a return alarm signal on a ~~second non-faulty~~ transmission ring;

globally selecting the ~~first faulty~~ transmission ring to transmit traffic to a head end node;  
and

globally selecting the ~~second non-faulty~~ transmission ring to receive traffic from the head end node.

8. (Original) The method of claim 7, further comprising:  
wherein the head end node sums traffic from the first and second transmission rings.

9. (Original) The method of claim 7, further comprising:  
wherein, the head end node terminates received forward and return alarm signals.

10. (Currently Amended) The method of claim 7, wherein detecting a facility failure on a ~~first faulty~~ transmission ring comprises receiving a ring level failure alarm on ~~a first the faulty~~ transmission ring.

11. (Currently Amended) A method of ring protection ~~at a remote node in a dual fed network~~, comprising:

~~detecting~~ detecting, at a remote node in a dual fed network, a forward alarm signal on a ~~first faulty~~ transmission ring; ~~ring, the dual fed network having a first transmission ring and a second transmission ring and the remote node independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic;~~

passing the forward alarm signal on the ~~first faulty~~ transmission ring;

globally selecting the ~~first faulty~~ transmission ring to transmit traffic to a head end node;

and

globally selecting ~~the second a non-faulty~~ transmission ring to receive traffic from the head end node.

12. (Original) The method of claim 11, further comprising:

wherein the head end node sums traffic from the first and second transmission rings.

13. (Original) The method of claim 11, further comprising:

wherein, the head end node terminates received forward alarm signals.

14. (Currently Amended) A method of ring protection ~~at a remote node in an access network having a head end node that dual feeds traffic on a first and a second transmission ring to a plurality of remote nodes, the method~~ comprising:

when one of ~~the a~~ plurality of remote nodes in an access network receives a return alarm ~~signal, signal on a first transmission ring, the access network having a head end node that dual feeds traffic on the first transmission ring and a second transmission ring to the plurality of remote nodes and each of the plurality of remote nodes independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic,~~

passing the return alarm signal on the first transmission ring on which the return alarm signal was received; ring; and

globally selecting the first transmission ring on which the return alarm signal was received to transmit traffic to the head end node and one of the first transmission ring or the second transmission rings ring to receive traffic from the head end node.

15. (Currently Amended) A method of ring protection ~~at a remote node in an access network having a head end node that dual feeds traffic on a first and a second transmission ring to a plurality of remote nodes, the method~~ comprising:

when ~~the~~ a remote node in an access network receives a forward alarm ~~signal~~, signal on a faulty transmission ring, the access network having a head end node that dual feeds traffic on a first and a second transmission ring to a plurality of remote nodes and each of the plurality of remote nodes independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic,

passing the forward alarm signal on the faulty transmission ring on which the forward alarm signal was received; ring; and

globally selecting the faulty transmission ring on which the forward alarm signal was received to transmit traffic to the head end node and ~~the other~~ a non-faulty transmission ring to receive traffic from the head end node.

16. (Currently Amended) A method of ring protection ~~in an asynchronous transfer mode (ATM) synchronous optical ring network, the method~~ comprising:

at a central ~~unit~~: unit in an asynchronous transfer mode (ATM) synchronous optical ring network connected to a first and a second transmission ring;

feeding all traffic on ~~two~~ each of the first and the second transmission rings; and

summing all traffic received on the ~~two~~ first and the second transmission rings;

at a plurality of remote ~~units~~: units, each of the plurality of remote units independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic;

when one of the plurality of remote units detects a facility failure on ~~one of the two~~ a

faulty transmission ~~rings~~, ring.

transmitting forward alarm signals on the ~~one of the two~~ faulty transmission ~~rings~~ ring and return alarm signals on the ~~other of the two~~ a non-faulty transmission ~~rings~~, ring, wherein the forward and return alarm signals are ATM level operations, administration and maintenance cells; and

globally selecting the ~~one of the two~~ faulty transmission ~~rings~~ ring to transmit traffic to the central unit and the ~~other of the two~~ non-faulty transmission ~~rings~~ ring to receive traffic from the central unit; and

when one of the plurality of remote units receives a forward alarm signal,

passing the forward alarm signal on the ~~one of the two~~ faulty transmission ~~rings~~ ring on which the forward alarm signal was received; ring; and

globally selecting the ~~one of the two~~ faulty transmission ~~rings~~ ring on which the forward alarm signal was received to transmit traffic and the ~~other of the two~~ non-faulty transmission ~~rings~~ ring to receive traffic from the central unit.

17. (Currently Amended) The method of claim 16, further comprising:

when one of the plurality of remote units receives a return alarm signal,

passing the return alarm signal on the ~~one of the two~~ non-faulty transmission ~~rings~~ ring on which the return alarm signal was received; ring; and

globally selecting the ~~one of the two~~ non-faulty transmission ~~rings~~ ring on which the return alarm signal was received to transmit traffic to the central unit and ~~one~~ either of the ~~two~~ first and the second transmission rings to receive traffic from the central unit.

18. (Currently Amended) The method of claim 16, wherein when one of the plurality of remote units detects a facility failure on ~~one of the two~~ a faulty transmission ~~rings~~ ring comprises when one of the plurality of remote units receives a ring level failure alarm on ~~one~~ either of the ~~two~~ first or the second transmission rings.

19. (Original) The method of claim 16, further comprising:  
at the central unit,  
terminating received forward and return alarm signals.
20. (Currently Amended) A method of ring protection ~~in a network having a central unit and a plurality of remote units~~, comprising:  
at ~~the~~ a central unit:  
dual feeding traffic along a first and a second transmission ring to ~~the~~ a plurality of remote units; and  
combining traffic received on the first and second transmission rings; and  
at the ~~plurality of remote units~~: units, each of the plurality of remote units independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic::  
detecting a facility failure on ~~the first a faulty~~ transmission ring;  
transmitting a forward alarm signal on the ~~first faulty~~ transmission ring;  
transmitting a return alarm signal on ~~the second a non-faulty~~ transmission ring;  
globally selecting the ~~first faulty~~ transmission ring to transmit traffic;  
globally selecting the ~~second non-faulty~~ transmission ring to receive traffic;  
when a forward alarm signal is received, globally selecting the ~~one of the first or second faulty transmission rings ring carrying the forward alarm signal~~ to transmit traffic and the ~~other non-faulty~~ ring to receive traffic; and  
when a return alarm signal is received, globally selecting the ~~one of the first or second non-faulty transmission rings ring carrying the return alarm signal~~ to transmit traffic and one of the first or second transmission rings to receive traffic.
21. (Currently Amended) The method of claim 20, wherein detecting a facility failure on the ~~first faulty~~ transmission ring comprises receiving a ring level alarm signal on the ~~first faulty~~ transmission ring.
22. (Original) The method of claim 20, further comprising:  
at the central unit,  
terminating received forward and return alarm signals.

23. (Currently Amended) A ring network, comprising:

a headend node;

a plurality of network nodes; nodes, each of the plurality of network nodes independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic;

wherein the headend node and the plurality of network nodes are interconnected via a number of ring segments which form a first and a second transmission ring, wherein the headend node dual feeds data to the plurality of network nodes on the first and second transmission rings;

wherein when a failure is detected on a faulty transmission ring in one of the ring segments, adjacent ones of the plurality of network nodes transmit forward and return alarm signals;

wherein when a failure is detected or ~~on a forward~~ alarm signal is received by ~~one of the plurality of a first~~ network ~~nodes node~~ the receiving first network node selects ~~one of the first and second~~ the faulty transmission rings ring carrying the failure data or forward alarm signal to transmit traffic and ~~the other~~ a non-faulty ring to receive traffic; and

wherein when a return alarm signal is received by ~~one of the plurality of a second~~ network ~~nodes; node~~, the receiving second network node selects the ~~one of the first and second transmission rings carrying the return alarm signal~~ non-faulty ring to transmit traffic and selects one of the first or second transmission rings to receive traffic.

24. (Original) The network of claim 23, wherein alarm signals are terminated at the headend node.

25. (Currently Amended) A ring network, comprising:

a headend node;

a plurality of network nodes; nodes, each of the plurality of network nodes independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic;

wherein the headend node and the plurality of network nodes are interconnected via a number of ring segments which form a first and a second transmission ring, wherein the headend node dual feeds data to the plurality of network nodes on the first and second transmission rings;

wherein when a facility failure is detected on ~~the first a faulty~~ transmission ring, adjacent network nodes transmit forward alarm signals on the ~~first faulty~~ transmission ring and return alarm signals on ~~the second a non-faulty~~ transmission ring;

wherein when a failure is detected or a forward alarm signal is received by ~~one of the plurality of a first network nodes node~~, the ~~one first~~ network node selects the ~~faulty~~ transmission ring ~~carrying the failure or forward alarm signal~~ to transmit traffic and the ~~other the non-faulty~~ ring to receive traffic; and

wherein when a return alarm signal is received by ~~one of the plurality of a second~~ network nodes, ~~node~~, the ~~receiving second~~ network node selects ~~the non-faulty~~ ring ~~carrying the return alarm signal~~ to transmit traffic and one of the first or second transmission rings to receive traffic.

26. (Original) The network of claim 25, wherein the headend node terminates received alarm signals.

27. (Currently Amended) A ring network, comprising:

a plurality of network elements including a central unit and a ~~number~~ plurality of remote ~~units;~~ units, each of the plurality of remote units independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic;

a plurality of ring segments coupled between adjacent network elements to form first and second transmission rings, wherein the central unit transmits data on the first transmission ring in ~~the~~ a first direction and transmits ~~the same~~ identical data on the second transmission ring in a second direction;

wherein when a failure is detected on ~~one of the first or second a faulty~~ transmission ~~rings;~~ ring adjacent network elements transmit a forward alarm signal on the ~~faulty~~ transmission ring on which the failure was detected and a return alarm signal on ~~the other a non-faulty~~ transmission ring;

wherein when a failure is detected or a forward alarm signal is received by ~~one of the number of a first~~ remote units, unit, the ~~receiving first~~ remote unit selects the ~~faulty~~ ring ~~carrying~~



~~the failure data or alarm signal~~ to transmit traffic and selects the ~~other~~ non-faulty ring to receive traffic; and

wherein when a return alarm signal is received by ~~one of the number of a second~~ remote ~~units; unit,~~ the ~~receiving second~~ remote unit selects the non-faulty ring ~~carrying the defect signal~~ to transmit traffic and one of the first or second transmission rings to receive traffic.

28. (Original) The network of claim 27, wherein alarm signals are terminated at the central unit.

29. (Currently Amended) A ring network, comprising:

a plurality of network elements including a central unit and a ~~number~~ plurality of remote ~~units; units,~~ each of the plurality of remote units independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic;

a plurality of ring segments coupled between adjacent network elements to form first and second transmission rings, wherein the central unit transmits data on the first transmission ring in ~~the~~ a clockwise direction and transmits ~~the same~~ identical data on the second transmission ring in ~~the~~ a counter clockwise direction;

wherein when a failure is detected on both of the first and second transmission rings, an adjacent network ~~elements transmit~~ element transmits a forward alarm signal on the first faulty transmission ring ~~on which the network element detected a failure~~ and a return alarm signal on ~~the other~~ a second faulty transmission ring; and

wherein when a failure is detected or a forward alarm signal is received by ~~one of the number of a receiving~~ remote ~~units; unit~~ on the first faulty ring, the receiving remote unit selects the first faulty ring ~~carrying the failure data or alarm signal~~ to transmit traffic and selects the ~~other~~ the second faulty ring to receive traffic.

30. (Original) The network of claim 29, wherein alarm signals are terminated at the central unit.

31. (Currently Amended) A method of ring protection ~~at a remote node in an access network having a head-end node that dual feeds traffic on a first and a second transmission ring to a~~

~~plurality of remote nodes, the method~~ comprising:

when one of ~~the~~ a plurality of remote nodes receives a return alarm signal, each of the plurality of remote nodes being disposed in an access network having a head end node that dual feeds traffic on a first and a second transmission ring to the plurality of remote nodes, and each of the plurality of remote nodes independently making an initial selection of either of the first or the second transmission ring to feed traffic and of either of the first or the second transmission ring to receive traffic,

passing the return alarm signal on the first transmission ring ~~on which the return alarm signal was received;~~

globally selecting the first transmission ring ~~on which the return alarm signal was received~~ to transmit traffic to the head end node; and

arbitrarily selecting one of the first or second transmission rings to receive traffic from the head end node.